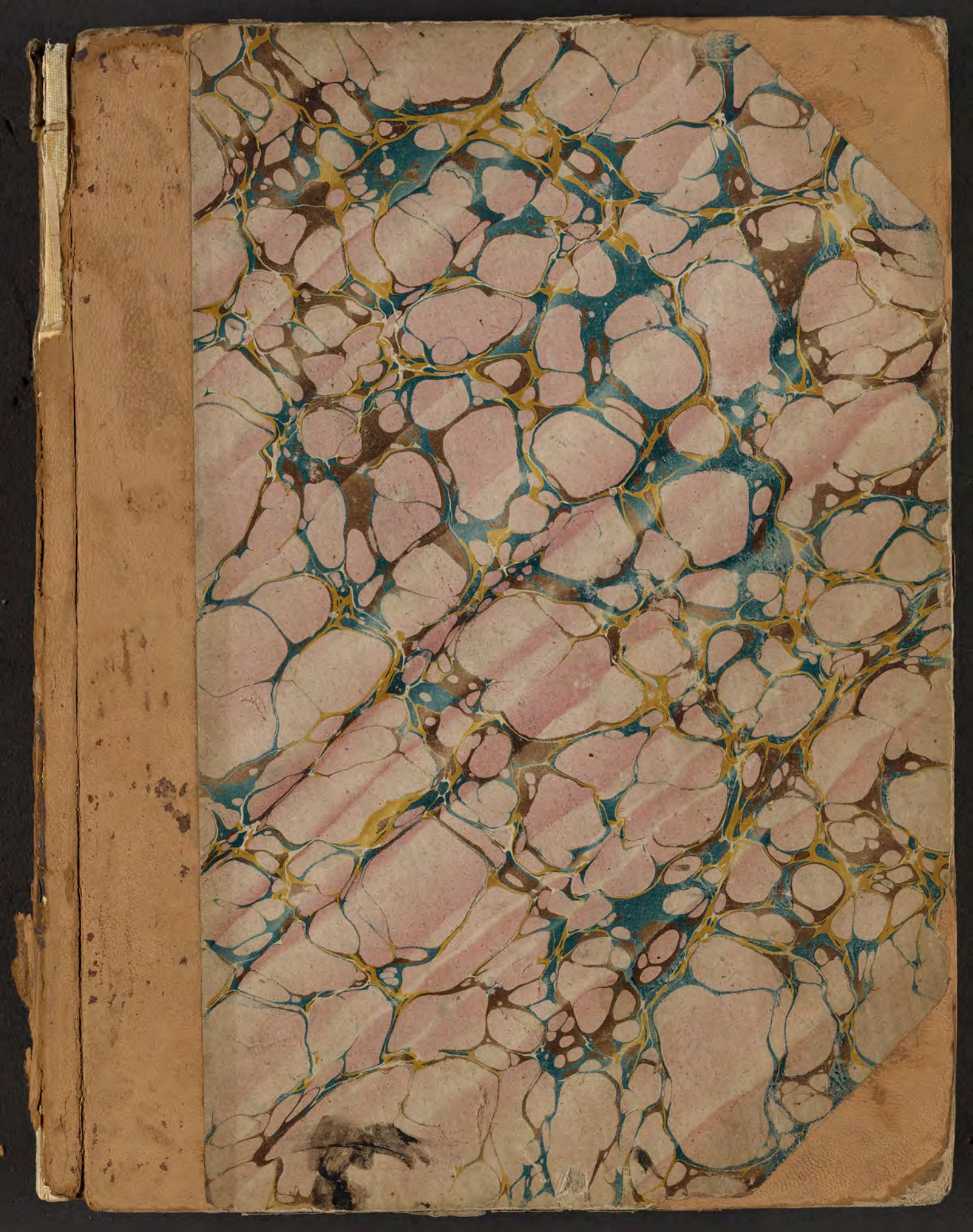

Apoplexia or Apoplexy.

This disease, so awful in its aspect, and consequences, seems very early to have attracted medical attention. By Hippocrates it is distinctly noticed, and from that remote period to the present, we have had continued inquiries relative to its pathology and treatment.

An attack of apoplexy may come on without any warning or indeed be preceded even by an unusual degree of health,— though it is more frequently threatened by a series of premonitions. Of the most serious of these is an acute or dull pain in the head, or vertigo especially on stooping, or drowsiness,— flushed, tumid countenance, turgidity of the veins of the neck and face, with throbbing of the carotid and temporal arteries,— or noises in the ears like the

ringing

of bells, – the rushing of wind, or falling of water, – disorder of vision, or hearing or of taste, – faltering of speech, or the using of one word for another, – temporary loss of memory, and habitude of mind generally, – deep inspirations, – sleep disturbed by unpleasant dreams, or fits of incubus, – cramps of the stomach, or a sense of load and fulness, in it, – numbness of the fingers, or slight paralysis of the muscles of the face, with a full irregular pulse.

The preexistence of these symptoms, is very indefinite. They may occur only a short time, a few hours or minutes prior to an attack, or in other instances for weeks and months, occassionally remitting or entirely disappearing, although when the stroke is about to take place, some of them are usually heightened in force, and particularly the prominent affections of the head or stomach.

Not less various are the modes of the

paroxism

itself. Mostly the individual falls down suddenly, deprived of sense and voluntary motion, and lies speechless, as if he were profoundly asleep, with a florid or livid face, stertorous respiration, - frothing of the mouth, sometimes pouting of the lips, or puffing, as blowing a flame, - ~~[illegible]~~, slow interrupted circulation, and ~~great~~ inequality of temperature, the head being hot, while the extremities are cold, and with little or no power of deglutition.

On other occasions, when probably the stomach is primarily in fault, the attack resembling more typoinemia, is usually preceded by severe stricture across the forehead, - a deep seated pain in the head, with a feeling of drawing in the muscles of the back of the neck, attended by vertigo, great confusion of ideas, tremors of the limbs, praecordial oppression with heavy sighing, or by cramps of the

stomach

or bowels or by nausea or vomiting, palor of face, universally cold, and in some degree collapsed, surface, dewy perspiration on the head and neck, and an irregular feeble pulse.

As the cerebral affection increases, the more marked symptoms of the disease supervene, and the paroxism becomes confirmed, which is sometimes connected with convulsions. This state of things in either case, may be independent of, or associated with paralysis to a greater or less extent, hemiplegia mostly, though a limb, or a muscle, may be only affected.

Life, however, in another variety of attack, either cerebral or gastric, is said to be at once extinguished, with scarcely a struggle, which ~~[illegible]~~ I have never seen.

By the ancients, persons thus destroyed were called attoniti, syderati, as killed by a thunderbolt, or some

malignant

influence of the stars. But such instances are extremely rare, and it is not improbable, that rupture of the heart, or large blood vessels has been occasionally mistaken for apoplexy. Death from this cause is instantaneous, of which a case occured in my own practice. It was that of a gentleman, who in apparently perfect health walking from one room into a another, fell down and expired, without a struggle, supposed, at first from apo-plexy. But on examination, we found a rupture of the trunk of the pulmonary arteries, and the chest filled with blood.

More recently, the melancholly instance of Judge Bouldin has presented itself, who while speaking in Congress sunk lifeless on the floor, supposed from apoplexy, till dissection revealed a rupture of the aorta. It is seldom that even a fatal paroxism of apoplexy ends sooner than some hours, and usually

endures

for several days.

Coming on as it may, an attack of the disease, when fully established, is characterized, by essentially similar phenomena, and identity of course. Those symptoms described, as appertaining to the ordinary and more genuine form of it, continue either with some abatement or aggravation. In the progress of the case however, it is not unusual for the countenance to exchange its florid or livid aspect for that of pallid turgidity, and to partake of this state with diffused clammy perspiration, or confined to the forehead in pearly drops. On other occasions, a more inflammatory action seems to be set up, and here the pulse becomes hard full and accelerated, the skin throughout, warm, or partially so, the eyes injected and rolling in their sockets, the pupil widely dilated or so contracted as to be nearly closed. It may

happen

that the intellectual faculties, and the power of articulation shall be partially restored, though manifesting nearly always incoherence of thought, with muttering indistinct expression. Difficulty of swallowing remains or is sometimes greatly relieved,- the secretions are all defective,- the urine especially very scanty, the bowels constipated, and great insensibility exists to remedies, whether internally or externally applied. But in the further progress of the case, there are changes decidedly favourable or the reverse, unequivocally denoting the result, as the subsidence of stupor the recovery of speech, and of the senses, with freedom in the circulation, and equal temperature, or an aggravation in these respects, attended by an exhaustion of the vital forces, involuntary discharges, urinary or alvine or both. Even, however, when health is so far restored, that most of the corporeal functions are duly performed,

the

paralytic affection, where it exists is little improved, and the mind for a long time betrays weakness, as well in impairment of memory, as dulness in the comprehension of the least complicated subject.

The causes of this disease may with propriety, be divided into the ~~predisposing~~ predisponent, and exciting, though such a distinction cannot always be made. As a circumstance inclining to it, the period of life has a material effect. Rarely does it occur before puberty,- commences for the most part about the meridian of existence,- then becomes more common,- and the largest number of instances, is found from the sixtieth, to the seventieth year of age, according to the report of Rochoux, from data afforded by ~~observed from~~ sixty cases of the disease. Between the ages of twenty and thirty, two cases, from forty to fifty,- seven cases, from fifty to sixty,- ten cases, from sixty to seventy, twenty three cases,

from

seventy to eighty, - twelve cases, - from eighty to ninety, one case. Estimates of this kind however, are to be received, not without reference to the circumstance of the difference in the proportion of individuals existing in the several periods of more advanced life.

An ~~Great~~ influence also, has sex in predisposing to apoplexy - the male being infinitely more so agreeably to my experience, and which is confirmed by Fabret, who in his "Statistics of apoplexy", says, that of two thousand, two hundred and ninety seven cases of it, there were sixteen hundred and seventy men, and only six hundred and thirty seven women. But it is fair to state, that Frank of Vienna makes the difference considerably less, - it appearing from his report of twelve hundred and forty one cases of it, in the Hospital of that city, the excess was only thirty three in favour of the males. But here too,

there

may be a fallacy in regard to these tables from the Hospitals furnishing the evidence, not being equally appropriated to the accomodation of the two sexes, which so often happens.

~~There exists a~~ Certain conformation with qualities partly congenital or acquired, as the large head, florid complexion, short and thick neck, broad shoulders, expanded chest, tumid abdomen, low stature, and general fulness and obesity, ~~that~~ with the sanguine temperament, ~~forms~~ constitute a figure and condition, which have been immemorially designated as furnishing the strongest apoplectic tendencies. But though such may be true as a general rule, there are numerous exceptions to it. I have seen the disease, and not unfrequently, in persons of every variety of shape, temperament, and habits, even in the attenuated, the phlegmatic and abstemious. Rochaux indeed declares, that neither the ~~se~~ foregoing, nor any similar

circumstances, have the slightest agency in the production of the disease. Even so far does he go as to maintain that ~~according to his observations~~ it is most incident to persons of the ordinary development, — and next, ~~to~~ such as are of a lean spare habit, and least of all, to the fat and plethoric. But surely this must be one of those paradoxes for which the present medical school of Paris is so remarkable, or that his countrymen among whom I presume his observations were made, are very differently affected in this way from other people.

Whatever prematurely enervates the constitution, as habits of intemperance or debauchery, or those of indolence or inactivity, conduce to the same effect.

Extremes of temperature, hot or cold seem also to create a susceptibility to attack. The largest number of cases however, is said by some writers, to occur in the vernal

and

autumnal equinoxes.

By a peculiar distemperature of the atmosphere, an increased liability to the disease is occasionally generated, and Baglivi and Lancisi positively affirm, that apoplexy has sometimes epidemically prevailed in Italy. Yet it is more than probable, that the disease was an intermittent, disguised in this attire, of which many instances occurred during its recent prevalence in its malignant shapes, in the neighbourhood of this city.

Much is imputable in the production of apoplexy to antecedent lesions of the brain or its meninges, comprehending all those ~~morbid~~ conditions, hereafter to be indicated in the exhibition of its morbid anatomy. But perhaps most is to be ascribed in this respect, or at least such is at present, a prevalent opinion, ~~and~~ to certain affections of the cerebral vessels. Examples of such a connection between the two diseases

are

Every doubt that whether it be by any process analogous to the inflammatory, the fact is undeniable of the frequent existence of such degeneration of the cerebral vessels, much more so, indeed, than those of any other part of the body.

reported by Morgani, Wepfer, Portal Rchoux Hodgson and Baillie. The disease says the latter, consists in a bony or earthy matter being deposited between the coats of the arteries by which they lose a part of their contractile or distensile powers as well as their tenacity. Bouillaud however, ~~author having investigated this point perhaps more carefully~~ declares with greater precision "that the earthy, calcareous and ulcerative degenerations of the arteries by which they give way by dilitation, extenuation, erosion or rupture, are owing to antecedent inflammation of their tunics more or less chronic and latent." Be the mode of production as it may, though it is *

Contributing to the same end, are the derangements of other organs, the heart and great vessels,- the lungs or of any of the abdominal viscera, the alimentary canal, the liver, the uterus &c or tumors of the neck, and indeed every thing else

which

materially accelerates, disturbs, or interrupts the circulation, occasioning directly or indirectly, cerebral congestion. But above all, the cardiac lesions, and especially hypertrophy of the left ventricle, by which blood is driven on the brain in undue quantity. Known to Lancisi, Baglivi, and others of the earlier pathologists, this point seems to have been pretty clearly demonstrated by Lallemand, ~~Britcheteau~~ Bouillaud, Hope, Clendenning and the accurate Andral. Coincidences between the lesions of the two organs are represented to be very frequent. Bouillaud tells us "that in fifty four cases of cardiac hypertrophy, the brain was diseased in eleven, six with apoplexy, and five by softening of the cerebral texture -: Hope, "that of thirty nine instances of apoplexy, twenty eight exhibited affections of the heart," and Clendenning "that out of a very large number of hypertrophies ~~after heart~~

examined

*

No doubt apoplexy from Crapulence sometimes proceeds from an offence of this viscus, by the means stated. Yet far oftener is an impression on the duodenum. As intimate are the general sympathies of this intestine as those of the stomach itself, and particularly in relation to the brain. This was pointed out in the discussion of its immediate lesions. Especially am I inclined to the view of the more frequent duodenal origin of apoplexy, from Crapulency; by the consideration, that such seizures mostly come on some hours after the ~~[illegible]~~ indulgence, at the very time when the irritating ingesta may be supposed to have entered the duodenum. Nor are ~~the~~ the lower ~~[illegible]~~ bowels entirely exempt from irritations productive of similar effects. Examples indeed, are many of apoplexy, excited by

by him in three sevenths apoplexy coexisted. Notwithstanding however the boasted certainty of anatomical conclusions, these statements are controverted by Rochoux and Kellie each of whom is also a Carnifex of great renown. Exaggerated as some of these statements are, there can still, I think, be no doubt of the fact of a very common connection in the lesions of the two organs.

In enumerating the exciting causes, I shall select out of the extensive catalogue such only, as are most commonly ~~and~~ operative. These are an excess in eating or drinking, or certain irritating or intractable ingesta, or narcotic substances taken into the stomach,* ~~commonly~~ worms or offensive sordes or constipation. The suppression of any habitual discharge, ~~and~~ the catamenia or hemorrhois or the drying up of setons or issues or blisters, or old ulcers, or the repulsion of cutaneous

eruptions

has sometimes a similar effect. As often, perhaps more so, may the disease be immediately traced to an exposure to the sun, inducing insolation, or to hanging the head over a fire, or remaining long in a bath, or the reverse, the shock of a cold bath, or subjecting the feet to become cold, or a long exposure to a low temperature, so as to induce torpor particularly of the stomach, and then eating or drinking any thing Even moderately stimulating. Cases of apoplexy thus brought on, in a moment as it were, I have repeatedly seen, during our intense cold weather, and which might be suspected of more common occurrence when we advert to the deep implication of the cerebral system under such circumstances, exhibited by somnolency and various other signs. Nor must I omit among the excitants of the disease, violent exertion of the body, particularly in a bent posture, or intense exercise of

the

intellect, or loud haranguing, or vehement emotions, whether of joy, or rage or terror, or the act of coition, and in short, every impulse corporeal or mental, calculated to invite an undue current of blood to the brain, or which interrupts its return.

Mental excitation, in whatever way induced, is undoubtedly a prolific cause of the disease. Examples to this purport are numerously recorded, and I could add largely to the list. The most interesting which have lately occurred in this country, were in two of our most distinguished men. It was by a stroke of apoplexy, while engaged in arguing causes, which exacted all their mental resources, the celebrated Pinckney and Emmet nearly about the same time, had their glorious career terminated. More instances, however have I known from coition, particularly

in

men of advanced age, or in those whose powers have become prematurely exhausted by early and inordinate indulgence. Three of the old Marshalls of Napoleon, it is well ascertained, died in the very act.

The apoplectic state will be recognised with sufficient readiness without entering much into details. Considered pathologically, some of the forms of cerebral palsy have the closest analogy to it, and indeed, the two conditions are essentially identical. But more of this hereafter. The same may be said of the affections denominated carus, catapnora, Coma, Lethargus, they like paralysis being only gradations of the apoplectic state, without any specific difference. Epilepsy also, by many has been similarly viewed. But though bearing in common several features, it materially varies from apoplexy in other respects. In epilepsy the person

sometimes

falls down suddenly, as in apoplexy, there is much spasmodic and convulsive movement, and especially of the muscles of the face,— whereas in the other case, he lies motionless, as in heavy sleep, snores and has sterterous breathing. The paroxism of epilepsy, too, soon passes off, while the other ordinarily endures for hours or even days. The muscles in the former, are convulsed or rigid, and in the latter, universally relaxed.

The fit of intoxication is sometimes, it must be admitted, very analogous to genuine apoplexy. Yet it may be distinguished from it, by an inquiry into the history of the case, by the odour of the liquor in the breath, when it proceeds from drunkenness, and by retention of sensibility in the upper lip to the impression of water dropped upon it.

From the suddeness with which life is terminated, the rupture of the heart,

or

of one of the great vessels, has I am persuaded, as already intimated, been frequently mistaken for apoplexy. But among other discriminating signs, death from such cardiac or vascular lesion, is immediate, and the aspect of the corpse pallid or exsanguineous.

Exactly however, in proportion as it is practically important, so is it difficult to distinguish the several forms of apoplexy originating in different causes, and located in different parts. It can, in fact, be only done by a careful perquisition into the history of the case. Yet we are not entirely destitute of the basis of a diagnosis. The cases radicated in the digestive tube, are commonly preceded by more or less of the symptoms of dyspepsia, acid eructations, flatulence, tenderness of the epigastric or hypochondric regions, or intestinal irritation of different kinds, resembling sometimes the indications

of

* Yet far oftener to an impression on the duodenum. As, intimate are the sympathies of this intestine as those of the stomach disclose, ~~[illegible]~~ and particularly in relation to the brain. This was pointed out in the discussion of its more direct lesions. What inclines me ~~[illegible]~~ strongly to the view I have adopted of the more frequent duodenal origin of apoplexy from repletion, is the consideration that such seizures mostly come on some hours after the indulgence, at the time when the irritating ingesta may be supposed to have entered the duodenum.

worms, or cramps and other uneasiness, the habit of constipation, and the usual effects it produces, the furred, loaded tongue, foul breath, and the secretions or excretions, whether urinary or alvine, variously vitiated. These are signs which will aid us in ambiguous cases. ~~Bracket it often happens, that an~~ Lf. uncertainty exists as to the cause an attack may be traced to causes ~~without~~ acting immediately on the stomach, as a full meal, or something indigestable, or to an undue indulgence in drinking, or to a narcotic substances ~~such as opium~~.

The symptoms of the paroxysm in the two forms of the disease, the idiopathic & symptomatic also vary to a certain extent. ~~When~~ the, Epigastrium being ~~stomach~~ ~~is~~ the primary seat of it, ~~or it is brought on by repletion~~, there is usually much nausea or vomiting – the face is pallid the skin cold, and in some degree collapsed – the pulse weak and diminutive, and the respiration comparatively

little

disturbed. The case, in short, resembles ~~very nearly~~ in its general aspect, syncope. Much in the same way do we discriminate those cases originating in the liver, the uterus and other remote organs. Each ~~case~~ is to be carefully examined in all its circumstances, and such phenomena particularly noticed as seem to indicate its primary source.

As a guide to our prognostications it may be stated, that simple apoplexy is more curable than (in combination) ~~when combined~~ with palsy to any extent.

~~The disease originating in the stomach or any of the abdominal viscera,~~ the prospect of recovery too, when secondary is better than if originally ~~primarily~~ seated in the brain; - though even the former case very often terminates fatally. As to the degree of danger however this must essentially depend on the state of the brain, whether there be merely vas-cular congestion, or extravasations from

rupture

of vessels, or otherwise, or effusions from pre-existing irritation, or inflammation, or some of those derangements of structure, which are to be noticed. In making up our decision, therefore, it is necessary to connect with the existing symptoms, a complete review of the case; in reference to its probable causes, and pathological condition. That recoveries never take place in cases proceeding from extravasated blood is a common opinion, sanctioned in some measure, by medical authority, ~~which is not true~~. Whether the blood is ever absorbed, or otherwise removed, is disputed. The negative side in this discussion is assumed by Sir Astley Cooper, who believes from extensive dissection, that instead of the blood being taken up, the brain gradually acquires the power of sustaining its pressure, and in this way, relief is afforded. ~~These learn~~ French pathologists, of late, maintain the contrary, and show

† Clots or a coagulum of blood, which had endured for any time.

But

a very curious process employed by nature in this emergency. By the dissections of Rochoux, Riobe and others it appears, that around the clot of extravasated blood, a sac is formed probably of coagulable lymph, ultimately converted into a cellular or serous membrane, which secretes a serous fluid, that dissolves and liquefies the coagulum, rendering it easy of absorption, in which way it is sometimes ultimately removed, together with the cyst, and a cure effected. These sacs which have been claimed as a discovery, are described both by Morgagni and Wepfer, though apparently without any distinct knowledge of their mode of origin or use. Never have I met with *

Generally in its more vehement shapes, however induced, apoplexy is to be considered as a most formidable and fatal disease, though in no instance, should it be abandoned as hopeless.

Among the most encouraging indications are the red face, vigorous circulation,

with a warm diffused perspiration, and comparatively easy respiration,— bleeding from the nose, or the coming on of the hemorrhoidal ~~or menstrual~~ discharge, or a spontaneous salivation or freedom of evacuation from the bowels and kidneys. Cases also are said to prove more curable, when preceded by monitory signs as oftener owing to congestion, than extravasations from the rupture of vessels. ~~Also~~ Further it is said that the disease is less dangerous when occurring after middle life, and is particularly fatal to children. But I suspect the reverse to be true. Certain it is, that preliminary affections thus ending, mostly proceed from irremediable chronic lesions of the brain, and recoveries are very seldom indeed at an age at all advanced. It does not appear clearly to me what is meant by apoplexy in childhood. Taking it however, to be one of those cerebral determinations

followed

by convulsions, incident to this early period of existence, I should say it is comparatively a manageable affection.

The symptoms of the most grave import are the pulse being weak, or exceedingly slow, irregular and above all intermittent, or does not rise or otherwise improve after venesection, and other remedies, it showing extravasation of blood, and not turgescency of vessels as the pathological condition: heavy stertorous, interrupted breathing, with foaming at the mouth, or puffing of the cheeks: very pallid or livid countenance, and dilated or contracted pupils, — cold surface and profuse perspiration, especially limited to the head and neck, — great disorder of the nervous and muscular systems, and when it amounts to convulsions, of one side only, recoveries I suspect never take place.

~~Mouth~~. Diversity of appearances has been reported in the autopsic inspections

of

this disease.

Every part of the vascular system of the brain is sometimes replete with blood. Both arteries and veins are turgid or even heavily engorged, the latter more commonly, and of the meninges, as well as of the substance of the organ. But on some occasions, it is limited mainly to the one or other portion of structure, and may be with, or without extravasations of any kind. Commonly however the latter are found. The blood may be deposited on the surface of the brain, though oftener in its substance, and cases occur where it occupies both positions. It is met with between the membranes, on the exterior, and throughout the internal cerebral structure, about its basis, among its convolutions, and in the ventricles. Entering these cavities, it is by rupturing the substance of the brain. The effusion varies in several respects. It may consist of pure blood, of a florid colour

or

dark grumous, or concreted, and is contained in several small cavities, or accumulated in one mass, its differing exceedingly also in quantity, from a few drachms to as many ounces. The surrounding brain is usually softened or at least less consistent than natural, or as has sometimes been observed, condensed and hardened.

No doubt, such as I have described it, is the ordinary disposition of the extravasation. Not less certain however, is it, that occasionally, instead of being collected at a point or points, in clots, it remains fluid and is infiltrated very diffusively through the texture of the organ, in proof of which, on cutting into it, any where almost, oozings of blood follow.

But in place of these sanguineous effusions, we are now and then presented with instances of serous deposits, — the fluid clear and insipid, or of a saltish taste, and of a yellowish or reddish colour, and

sometimes

of a gelatinous consistence, ~~either~~ pellucid, or opaque, or brownish or cineretious.

~~It was remarked by~~ Morgagni remarks, and which has been confirmed by Rochoux, by Serres, and generally by the late cultivators of pathological anatomy, that though extravasations of blood are to be met with throughout the cerebral structure, they mostly take place in the cerebrum. Examples of the kind have indeed been held to be very rare in the cerebellum. Morgagni reports only a solitary instance.

This, which seems to be the common opinion of the French writers is contradicted by Cheyne, who tells us that he met with such appearances oftener in the cerebellum. But the question, I think, is now settled by Andral, with his customary accuracy of research. Of three hundred and eighty six cases of the disease, he states that the effusion was in two hundred and two, in the substance of the brain, which

is

on a level with the corpora striata, and Thalami opticorum.— that in the corpora striata, sixty one,— in the Thalami opticorum thirty five,— and immediately above the centrum ovale, twenty seven instances were detected. The lateral lobes of the cerebellum furnished sixteen cases,— the portions of the brain anterior to the corpora striata ten, the mesocephalon nine, the spinal cord eight, the posterior lobes seven— the middle lobe of the cerebellum five, the peduncles of the cerebrum three, the corpora olivaria,— the peduncles of the cerebellum and pituitary gland, each, one example. This table while shewing the comparative liability of the several portions of the organ to this lesion, demonstrates its far greater frequency of occurrence in the cerebrum.

The foregoing are represented as the ordinary phenomena, revealed by dissection in apoplexy. Not seldom however, is the evidence of acute inflammation exhibited

to

a greater or less extent, in the meninges, as well as substance of the brain, and in other cases, every variety of organic lesions ~~particularly~~ of the corpora striata, the plexus choroides, the septum lucidum, the pineal gland, the parietes of the ventricles, and the medullary substance of the brain as well as of its blood vessels and membranes. These consists of abscesses encysted, or steatomous tumors, schirri, ossifications, and calculous degenerations, particularly of the arteries, polypous concretions, fungosities hydatids, exostoses, indurations or softenings of texture, tubercles &c, with morbid affections of the other parts, as of the heart, the great vessels, the lungs, the liver, the stomach intestines uterus &c

But such lesions, I should presume are to be considered the product of preexisting disease, operating by the irritation they excite, rather as causes, than the effects of apoplexy. Extraordinary as it may

seem

death has happened in this disease, when on inspection, nothing morbid whatever was discovered ~~could be discovered~~ in the brain or its appendages. But on this point I cannot do better than cite the clear and explicit language of a distinguished modern authority.

"The particular affections called apoplexy and palsy" says Mr Carlisle" have been illustrated by anatomical inspection, and it well known that the greatest number of cases have shewn lesions of the brain or its vessels, sufficient to explain the events. But it is also certain, that examples frequently occur, where no appearance of rupture or effusion in those parts could be found. That apoplexy or temporary palsy, may arise from vascular congestion within the scull, is to be inferred from analogous effects, following the known stoppage of the venous return of blood from the

brain

and such congestion, might even extend to the final suppression of all the vital functions, and leave no trace of physical derangement after death. Other causes are also capable of inducing fatal derangements of the sensorial organs; for excessive doses of opium or ardent spirits appear to extinguish life, by their direct action upon the substance of the brain independently of the disordered changes which they induce in the circulatory and respirating organs."

As affording evidence to the same purport, I take the following extract from Dr. Abercrombie.

"It is unnecessary to multiply cases of simple apoplexy, or apoplexy fatal without any morbid appearance." The records of medicine abound with examples of it, and with extensive controversies in regard to its nature and cause; (Willis de part 2d p. 276.

It is indeed, now quite certain as the result of the most extensive observation, that in many instances, apoplexy is fatal without any appreciable derangement of cerebral structure, and in others, so trivial as not at all to account for the disease, to which purport we have the testimony of Willis, Nicholai, Le Cat, Welhand, Kortrin, Burserius, Tissot, not to cite a host of recent and perhaps more authoritative writers.

Taking the post mortem appearances, in connection with the symptoms, it has been inferred, that the proximate cause of apoplexy, in most instances, at least, is compression of the brain, either from simple engorgement, or extravasation of blood. But this hypothesis, so long entertained in the schools, is at present controverted, and with such force that its validity is by no means so well established as formerly. From a series of experiments, M. Serres, a celebrated physician of Paris, thinks that he is

entitled

to the conclusion, that so far from apoplexy being occasioned by cerebral compression, the brain is not susceptible of such a state.

The experiments to which I allude, consist in trepanning dogs and other animals, and then piercing through various parts of the brain so as to produce an hemorrhage, cutting cavities into it, and filling them with water, or crude mercury to occasion pressure equal to that from extravasated blood, all which were done without any effect similar to apoplexy. It hence results, says he, from the whole, that effusions of blood do not produce apoplexy, whether lodged between the cranium and dura mater, or between that membrane and the brain, - Whether they occupy the great lobular fissure, and there lie on the Corpus callosum; - Whether cavities be made in the fore, hind or middle part of the hemisphere,

or

quite through both of them, or finally, whether piercing through the corpus collosum, we penetrate into the ventricles of the brain, and fill these cavities." To support the induction from his experiments, he next brings forward a collection of pathological facts, and a train of reasoning, which though interesting and ingenious, I must pass over, from the want of time for such details.

Conceding the fidelity of these inquiries, that the love of paradox or novelty, has led into no deceptions or misrepresentations, against which injurious suspicions, the author is vindicated by the ~~[illegible]~~ respectability of his character, it does still appear to me, that he has not satisfactorily made out his case, or at all events, to the extent which he claims.

The first part of his proposition that the brain is not compressible, is opposed by general observation, by particular

facts

and by direct and positive experiments contradictory of those he made. In stating the evidence to this point, it might be enough in relation to our common experience, merely to advert to those surgical operations, in which so much relief is afforded, in certain cases by the removal of extravasated blood, or a depressed portion of the cranium.

There are two cases, however, so particularly instructive, in every view, that I cannot omit them. The first of these is given by Mr Henne in his work on the Principles of surgery. He states that, at the battle of Waterloo, a soldier had a small portion of the skull, beaten in, to a considerable depth, and consequently, was rendered nearly lifeless, all sensation and motion being suspended, who, on the elevation of the depressed bone, immediately arose, dressed himself, and reacquired perfectly his intellectual, and other cerebral functions.

By

Sir Astley Cooper, who reports a case still more striking, it is stated, that a man was brought into St. Thomas' Hospital with a depression of the left parietal bone which had occurred more than a year before. He was labouring under partial stupor, had lost the faculty of speech, and in a great degree the power of motion — though he so far retained his senses as to be able to indicate his wants, by certain signs. When hungry he would grind his teeth, — when thirsty, suck his lips — when he had occasion to void his faeces or urine, this was expressed by certain movements in bed. The depressed portion of bone being removed by the trepine, he was almost immediately relieved, and in a very short time afterwards, completely cured. Thus to repeat the figurative language of the relater of the case, was a man who for thirteen months and a few days, had drunk the cup of Lethe, and

lived

unconscious of existence, by the removal of a small portion of bone which pressed on the brain, restored to the full possession of the powers of mind and body.

The other part of the proof, I shall give more circumstantially as less familiar or well known.

In this city, there was formerly a man, who, in some conflict with the Indians, lost a part of one of the parietal bones, leaving the brain at this point without the cranial covering. To procure money, he exhibited himself, permitting pressure on the brain with the finger, which when applied with some force, instantly induced coma, and a loss of sense, and motion, from which, he instantly recovered, on the withdrawal of the pressure. These experiments I saw made by the late Professor Wistar before his class.

Exactly such a case occurred in Europe, and I presume they are not

uncommon.

"There was some years ~~ago~~ since, says the relater of it, a beggar at Paris, part of whose skull had been removed, without injuring the brain, in consequence of a wound. This being healed, he wore a plate upon the part where the skull was wanting, to prevent the brain from being hurt by any accidental touch. For a small piece of money, this poor creature took off the plate, and allowed the brain to be gently pressed, by laying a handkerchief, or some such light covering over it. This immediately occasioned a dimness of sight and drowsiness, - the pressure being somewhat augmented, he became quite insensible, with his breathing and every other symptom of a person in an apoplexy - from which state he never failed soon to recover upon the removal of the pressure. As this experiment was attended with no pain, it was often repeated and always with the same

effect"

London Magazine 1823.

We have a case of a similar nature reported by Richerand, that of a woman who had lost a portion of the cranium by disease, where every vestige of intellect and feeling was suspended by pressure on the exposed brain, and each instantly restored on its withdrawal. Not many years ago, I attended a young gentleman of this city, a part of whose parietal bones, had been accidently shot away, in whom, the same phenomena might be induced.

The following experiment is related by Portal. He trepanned a dog, and compressed the brain with his finger, next, he poured through a funnel adapted to the aperture, at different times, water, and crude mercury, so as to induce a graduated compression, more or less strong on the brain. The effects were similar with each fluid. As soon as the compression was felt, the animal ceased to bark: when increased,

it

became convulsed, and on a greater degree of compression, coma, with sterterous respiration took place. On the removal of the pressure, the functions were restored. This experiment was often repeated, and with the same results.

Nearly a similar experiment, we have from Sir Astley Cooper.

He trepanned a dog, and detached the dura mater in a circle from the inner table of the skull, to the extent of half an inch. He then pressed on the dura mater, so as to depress it about a fourth of an inch, and the dog exhibited no signs of uneasiness. He then prefsed upon it to half an inch of depression, and the animal showed great signs of uneasinefs, endeavouring to escape from his grasp with all its efforts. He then pressed to three quarters of an inch, and the animal became stupid breathed laboriously, with a slow and irregular pulse. On removing the pressure, the dog,

in

half a minute, started from the table, turned several times round as if giddy, and then staggered away.* Book on palsey p. 86. 87.

Taking the whole of what I have stated into consideration, it seems fair to infer, that the brain is susceptible of compression, and however induced, whether by turgidness of the blood vessels only, or extravasations, we have as a result, the apoplectic state - though a considerable degree of pressure is required for its production. It is probably owing to the latter circumstance, the want of adequate compression, that the experiments of Serres failed, and also, that collections of extravasated blood in the brain are sometimes seen, without those effects which a larger quantity would have caused, or that the brain has gradually accommodated itself to it. Cases are numerously recorded, showing little or no effect from cerebral effusions, where they have slowly taken place. I recollect particularly one

by

Heberden, where eight ounces of serum were found in the ventricles, without any manifestation of it during life, and another by Marshall, a respectable English surgeon, of more than double the amount, with no greater reason to suspect its existence. Examples still more striking are afforded in chronic hydrocephalus, the quantity here, being sometimes several quarts. But such I shall not adduce, as from the deficiency of the cranium in these instances, the pressure is probably less. It has been urged I am aware, that in the experiments of Serres, the brain suffered no pressure, because, there would be rather a tendency to a protrusion of the contents through the hole in the cranium. But to obviate this objection, he closed the aperture with a cork.

Touching the particular pathological views of Serres and his followers, it will, perhaps, be sufficient merely to mention

that,

disclaiming extravasations, and effusions, of every species, as occasioning apoplexy, they maintain, that it originates exclusively in an altered condition of the brain itself, or its membranes, the disease being modified by its location. Thus, he says. 1st When an apoplectic attack presents no symptom of paralysis, we may presume that its seat is in the meninges, and, that the substance of the brain is not dilacerated or altered.

2nd That when, on the contrary, paralysis becomes complicated with apoplexy, it is no longer in the meninges, but in the brain itself, which is the principal seat of the irritation.

3rd That serous, sanguineous, sero-sanguineous, and purulent effusion, are owing to irritation in the meninges, or the brain, or the rupture of the arteries or veins, which may take place during apoplexy, though subsequent, and as the

effects

of the previous irritation."

These views essentially sound, must still be received, with some qualifications. How far the distinction between apoplexy and palsy depends on ~~location~~ the difference of location, I am not prepared ~~positively~~ to say positively. Though the hypothesis is not without plausibility, I think however on the whole, it is not admissible. To me indeed it appears very doubtful, whether any lesion restricted to the meninges alone, except that of extravasated blood, is ever productive of either affection, - though that a state of irritation precedes every other phenomenon of these diseases, is quite certain. By it an afflux of blood is invited to the ~~membranes~~ or substance of the brain, which where excessive, instantly induces the one or the other or both of these conditions, or more remotely, by effusions or extravasations, the whole operating by compression of that organ, interrupting

the

generation, or distribution of sensorial influence. It may be alleged ~~in support~~ in support of this view of the necessity of compression, that simple irritation or phlogosis of the meninges, or the brain causes only the phenomena comprehended under the title of phrenitis, surely a very different disease from apoplexy or palsy.

An hypothesis somewhat different which had ~~long~~ been vaguely entertained, is now presented in more definite shape by Abercrombie of Edinburgh. From a long course of reasoning, he is conducted to the conclusion, that the disease does not depend on pressure, or undue determination of blood to the brain, but is owing only, to an interrupted circulation in that organ, from more blood entering from the arteries than can be returned by the veins."

The Cranium, says he, is a complete sphere of bone, which is exactly filled by its contents, the brain, and by which,

the

brain is closely shut up from atmos-
-pheric pressure, and from all influence
from without, except what is commu-
-nicated through the blood vessels which
enter it. In an organ so situated, it is
probable that the quantity of blood cir-
-culating in its vessels cannot be ma-
-terially increased, except something
gives way, to make room for the additional
quantity, because the cavity is already
full.

Now specious ly as all this is
stated, it will not bear a scrutiny. The
cranium is full, though not completely
full. There are several degrees in this
respect. Either loosely, or tightly, may a
trunk be packed, and in the same way,
the cranial cavity. Full as it ordinarily
appears, more blood can be forced into
it. We see it constantly done, even in
the familiar instance of stooping, in
certain persons, who become giddy or

stupid

* ~~Lacum~~ The recumbent posture has a similar effect, especially if the head be low, and hence the proneness to cerebral attacks in sleep. But above all, is this evinced in hypertrophy of the heart, where from augmented size, and muscular power, blood is driven on the brain in such quantity, as in some instances, to induce, at once, the most alarming, or fatal engorgements.

and sometimes, really apoplectic.*

Next, he goes on to show that the doctrine of increased determination of the blood to the brain is equally fallacious.

" The blood, continues he, being propelled in every direction, by an impulse primarily derived from the heart, it is not easy to conceive how, in the natural state of the parts, it should be propelled to the head with greater force, or in greater relative quantity, than to any other part of the body. To this consideration we must add, the important fact, that the apoplectic attack often takes place with symptoms opposite to those which would accompany determination to the head, did such a state really exist,— the face being in many cases pale and the pulse feeble. Upon all these grounds, I think, we must admit that the doctrine of determination to the head, is not supported by the principles of pathology, and does

not

accord with the phenomena of apoplexy."

Too much time would it occupy to examine critically this hypothesis, even if I thought it deserving of such notice. As regards the first part of it, the incom-pressibility of the brain, I cannot help thinking, it has already been abundantly refuted,- and in relation to the second, I would merely ask in his own language: "if more blood enters by the arteries than can be returned by the veins", how is it possible for the brain, which fills up every part of the cranium, to escape pressure? But he sets out with an error, which vitiates all his reasoning. Conceding as he alleges, which I am not ready to do, that the blood is distributed throughout the system by the same machinery, namely, the heart, an excess of it could not be propelled into any particular organ. This, at most, has relation only to a natural or healthy state of things, and especially to the general circulation. In

disease,

it is very different, and the greatest irregularities may take place in it, accelerated in one part, while correspondently retarded in another, or the arteries may force forward more blood than can be returned by the veins, whereby, topical congestions are induced. Not ~~more~~ to insist on the concurrence of the large arteries in the process we are aware, that the capillary is in a great degree, independent of the general circulation in its movements, and it is this, which is mainly concerned in the production of engorgement. Determination is here an improper term, inaccurately expressive of the mode of what takes place. Congestion does not so frequently proceed from blood being unduly driven into a part, by any increased impetus of the moving powers of the circulation, as that it is drawn into it by a previous state of irritation of the capillaries. It is an invitation, not a determination, to which congestion should be ascribed.

Whatever

view may be taken of the subject considerable embarassment is still confessed, as to the proximate cause of apoplexy from the different forms which the disease exhibits, and the different and even contradictory phenomena on ~~its~~ dissection. It has been remarked that, as regards these affections, many of them exhibit ~~one disorder,~~ extensive extravasation of blood, or congested vessels, while in some other cases, no morbid appearance can be detected in the brain, on the most careful examination. Before engaging in any exegetical speculation on this obscure matter, it may be proper to observe that a difficulty arises from a want of precision in the statement of such cases. It has I suspect, too often happened, that when individuals have thus dropped out of life, as it were, the event has been assigned to apoplexy with little or no inquiry or discrimination. Yet it cannot be denied, that such cases are of occasional occurrence. But should

they

be viewed as genuine apoplexy? As I have previously conjectured, it is very likely, that some of these instances of sudden death reported to be apoplectic, were caused by rupture of the heart or great vessels.

Concerning other analogous cases it seems equally probable, that they may proceed from organic derangements, as softening or hardening of the cerebral texture till lately very much overlooked, or those delicate lesions of the mechanism of the brain not cognizable to the senses, though destructive of its operations, as sometimes happens in concussions, or they may be gastric affections simply, or rather of the centre of the ganglionic system of nerves by which the movements of organic life, particularly respiration and the circulation become suddenly suspended, of which we have illustrations in a blow on the epigastrium, or in the operation of oppressive ingesta, whether food, or intoxicating drinks, or certain more poisonous articles.

explanation of this point, it may be alleged that it is not at all improbable that in some instances of the disease, dependent on merely congestion of the cerebral vessels, every vestige of this condition may have been removed by the copious depletion in the treatment, leaving still however the brain so injured by the previous compression as to prevent the restoration of its functions, and death consequently ensued, or the phenomena may be referred on some other occasions to the retraction of the blood in the act of death, as is well known to take place in other diseases, the cutaneous affections, peritonitis, pleuritis in proof of which we have the remarkable change in the complexion of the of the corpse of the apoplectic.

Many of these will destroy life instantaneously, or more slowly with some of the phenomena of apoplexy, and no vestige of their effects shall be appreciable. In this, as well as in various other of our pathological

investigations,

the important control over the vital operations by the sympathetic nerve, has been too much neglected. Its centre must be regarded to all intents and purposes, as a second brain, exercising an influence, though somewhat different, no less interesting to the animal economy, in health and disease. Certain impressions on it, through the medium of the stomach, I repeat, may impair or destroy life, by an immediate lesion of the nerve. But under circumstances, where the irritation of the cerebral affection is closer, then, it is presumable that, the impression is reflected on the brain, and essentially the same condition induced, as when that organ is primarily assailed. Further, in explanation of this point, it is practicable, ~~may be argued that it is not at all improbable,~~ that in some instances of the disease, dependent on merely congestion of the cerebral vessels, every vestige of this condition may have been removed by the copious depletion in the treatment, leaving still however the brain

injured by the previous compression as to prevent the restoration of its functions, and death consequently ensued, or the phenomena may be referred, on some other occasions, to the retraction of the blood in the act of death, as is well known to take place in other diseases, the cutaneous affections, peritonitis, pleuritis, in proof of which we have the remarkable change in the complexion of the face of the corpse of the apoplectic.

On the whole, as to genuine apoplexy, it can scarcely be doubted, I think, on a review of the facts bearing on its pathology, that it is immediately induced by cerebral compression, all its causes tending directly or indirectly to induce this state, in which sensorial influence being no longer transmitted, the vital actions dependent on it, are weakened or abolished. It is unquestionably in this mode, that compression acts, and no less clearly does it appear, that in such a condition,

the

* More recently, a distinction has been instituted, as the case may arise from an undue rush of blood on the brain, or an extravasation of it, calling the first engorgement, and the second cerebral hæmorrhagy. ~~of brain~~. Correct as this view is pathologically, the two forms of the disease are perhaps, not sufficiently discernible, during life, to be ~~[illegible]~~ discriminated.

want of cerebral and nervous power may be induced by other causes, and without any appreciable organic lesions. These are the cases, which on this account, were formerly called nervous apoplexy.

Nosologists have commonly divided apoplexy into Sanguineous, and serous, as congestion of the vessels or an extravasation of blood, or of serum may be the supposed cause. This arrangement I shall not adopt. It is doubtful, whether serous effusions ever produce the disease, occasioning rather hydrocephalus, and ~~if~~ then, ~~[illegible]~~ the treatment is the same, as of that affection.* ~~without~~ as apoplexy ~~[illegible]~~, may proceed originally from other parts, ~~[illegible]~~ especially the epigastric region, is now admitted, and a distinction founded on this consideration, ~~as~~ being not without some practical importance, I shall not pursue it minutely, as ~~[illegible]~~ ~~classification of the disease, practically there is~~ ~~[illegible] better, I have therefore suggested by these views, viz.~~ idiopathic and symptomatic,

or

primary, and secondary, in relation to the brain.

In the management of well marked apoplexy, we have, from the peculiarly urgent nature of the paroxysm, to attend to its immediate relief, and, without any particular reference to the cause inducing it, or its primary location, the ensuing measures are to be adopted.

The patient is, ~~[illegible]~~ to be put in a posture ~~[illegible]~~ least favouring a concentration of blood in the head, and all ligatures, as the cravat, garters, with the shoes or boots, which occasion compression, must be removed. Equanimity is then to be attended to in regard to ~~the~~ drops of fluid. An exposure to fresh air is of much importance, and with this intention the windows and doors are to be thrown open, and unnecessary persons to be excluded from the room.

Entering on the medical treatment, ~~[illegible]~~ the state of the system which may be very different, is carefully to be determined. It will sometimes,

be

found exceedingly depressed, – the circulation so feeble as scarcely to be felt, and the skin cold, pale, and collapsed. Not long ago, I was called to such a case, in a very robust and vigorous individual too, where I was compelled to resort to the carbonate of ammonia, ether, and brandy toddy, with sinapisms and frictions, to excite the vital forces, which took several hours to accomplish. Nearly always, however, an opposite condition is met with, or the pulse is strong and voluminous, and the face turgid, florid or livid &c. An adequate degree of reaction existing, whether produced artificially, by the means I have mentioned, or by the natural recuperative powers, the whole weight of authority with very few exceptions, is in favour of venesection as the leading and most efficient remedy. To what extent it is to be carried, must of course be regulated by circumstances, and which precept indeed, applies to all

the

depletory processes — these being urged or forborne, according to the severity of the attack, and the capacity to bear the operations. Generally, thirty, or forty ounces may be taken, in a robust individual, — though much more is sometimes demanded. Ninety six ounces, were on one occasion drawn away, at once, by the late Professor Physick, and with complete success. The operation, when limited requires to be repeated, and in many instances, eight or ten pounds are lost in a few days.

It seems to be admitted, that the rapidity with which the blood is drawn off, has a considerable influence on the result of the operation; and hence it is not uncommon to open a vein in each arm. But it may happen that there is such feebleness of system, either from the want of original power, or from its being irrecover-ably stunned as it were, by compression of the brain, that blood must be cautiously

detracted.

*Less useful too, in the attacks from repletion, still imperatively demanded, by the alarming state of the brain, sometimes proving decisive, and always to be most depended upon as the best preparative for the successful operation of subsequent measures. The remarkable instance of profuse bleeding by Dr Physick to which I have just referred, was of this kind. The individual had eaten largely for supper, of roasted oysters and other articles, and the next morning was suddenly cloven down.

The effect of the bleeding will depend much on the nature of the case. If it proceed merely from congestion, the relief is nearly always prompt and complete. Caused, on the contrary, by extravasations, it is less so, as might be expected. Yet even here it is useful, by checking as in other hemorrhages, the further flow of blood, obviating inflammation, as well as repetitions of attacks. What it does in hemoptysis, it partly accomplishes in this case.*

The general may be greatly aided by topical bleeding, though it is a secondary and subordinate proceeding. Leeches or cups are usually adopted, and sometimes both together, or in succession. But the opening of the temporal artery or the jugular vein is also practised, and it has even been proposed to open the superior longitudinal sinus of the brain. This proposition comes from M. Dejean, Professor of Medicine at Caen, who had tried it with success on dogs

strangled.

Portal however objects to it as perhaps less effectual than opening the jugular vein, and also, from our having no means of stopping an hemorrhage thus induced. The suggestion is obviously too absurd to claim any serious attention, and I presume has never been carried into execution in the human subject. As to the other modes of blood letting I think, they are now seldom resorted to except where cups or leeches are not at hand, and as substitutes for these, are valuable. Local depletion is here a very important measure on general principles, and still more so in some cases of the disease, from the fact that the blood coming immediately from the brain being found very different from that in other parts of the circulation, the one dark and dissolved, owing probably to its half stagnant state, while such as is taken from the arm particularly, shall be unchanged, or preter-naturally florid, consistent and sizey.

under

which circumstances, opening the jugular vein, I should suppose is specially demanded. It will be well, when bleeding from the head does not answer, to apply leeches to the anus. We are aware of the ~~[illegible]~~ effect of the hemorrhoidal discharges in all the cerebral affections, and in this way they might be advantageously imitated. As auxiliary means, cold applications to the head, are not to be neglected, the whole of the hair being previously removed. To the custom of using ice, I cannot help objecting at least indiscriminately. The cerebral circulation at this stage of the disease, is most enfeebled, or sluggish, and intense cold to the head must increase these states. Frequently have I witnessed injury from it. Cloths wrung out of cold water are more appropriate appliances, and ice should be reserved for the state of powerful reaction, menacing inflammation, or to abate it, where it has already taken place. With

a

view to revulsion, warmth in the lower extremities is to be excited or maintained by fomentations, or decided irritation raised by sinapisms.

Next the evacuation of the alimentary canal claims attention, and here a controversy has arisen as to the choice of the mode, whether by puking or purging. It seems to me, that the one or the other is to be preferred, according to the character of the case. Caused by a loaded or otherwise offended stomach, emetics are plainly demanded, and equally proper are they, when the disease is induced by narcotics, and probably too, in in that state of the brain, and nerves formerly noticed as, constituting a case essentially different from sanguineous apoplexy. But though vomiting here, is more particularly applicable, I am not disposed altogether to exclude the practice from the other forms of the disease. To unload congested organs and equalize the circulation,

it

is often very effectual, especially after the loss of blood, and I think is prescribed too timidly in the cerebral affections of this nature. What still further encourages me to its use, is its acknowledged efficacy in concussions of the brain, a case in many respects, analogous to apoplectic conditions. Bloomfield, one of the most eminent surgeons of his day, strenuously recommended an emetic, and we are told by Sir Astley Cooper that, vomiting will sometimes by emptying the stomach, and forcing the blood through the brain, almost immediately restore the functions of the mind and body. It, ~~appears~~ may indeed be the means which nature employs, as spontaneous vomiting is so common an occurrence. Emetics in apoplexy are sanctioned among other distinguished English names, by Sydenham, Pitcairn Kirkland, Fothergill, Heberden, and by a still larger number of the authorities

of

* Even, when the disease is evidently excited by pernicious ingesta, they chiefly are serviceable, when promptly administered. Delayed till the offending cause has passed into the duodenum, they are more precarious, and often ineffectual. It is prudent too, to precede their use by venesection, an vehement sedatives. Of the many instances I have witnessed of the striking benefit from vomiting, thus qualified, not the least conspicuous occurred in a lady to whom I was lately called in consultation with Dr. Hodge. Her attack was violent, although venesection had been carried to a considerable extent, no relief resulted. Knowing her habits of gormandizing, I suspected a loaded stomach, which being thoroughly evacuated by an active emetic, a recovery instantly followed.

the continent of Europe. Cullen and the generality of practitioners however are opposed to their use.

Could we always discriminate the pathological condition, the perplexity with regard to the remedy, might be removed, and this difference of sentiment probably reconciled. As to myself, I should have little hesitation in resorting to an emetic under any circumstances, were I persuaded, that the case depended on turgescency of the vessels only, and not on extravasations or effusions, or other organic lesions. But in this consists the difficulty, and in the present state of our knowledge, I think, we should resort to them with great circumspection.*

Certainly, however, purgatives are usually more appropriate, and ought to be of an active character, as calomel and its ordinary adjuncts, worked by senna tea, the most proper certain of this class of articles.

Castor oil, with a portion of the spirit of turpentine, or the elaterium, or croton oil. The purgative is to be given as soon as the bleeding is performed, and repeated, ~~[illegible]~~, till the desired effect is produced. When the patient cannot swallow, which sometimes happens, it should be injected, or an attempt at least made to do it, through the Oesophagus Catheter. The action of the medicine may be promoted, by stimulating enemata, and which are further serviceable as revulsives. The latter, we are sometimes compelled to substitute altogether for purgatives.

~~Continuance~~ Evacuations from the bowels, are assuredly one of the most important processes in the cure of the disease.

This is the treatment of the first stage of apoplexy. As the case advances, or the evacuant measures have been carried to the full extent without relief, it has been made a question, how far it is proper to resort to the diffusible

stimuli

or the Cordial, Volatile and nervine medicines. The ancients were fond of the practice, and in which they have been imitated by many modern physicians. It is however, more to be found among some of the French practitioners of former days, who even poured down considerable quantities of spirituous liquors – though the carbonate of ammonia, was the more favorite remedy. Deeming apoplexy for the most part, as originating in the stomach, they managed it accordingly, trusting mainly to emetics, in the first instance, and then, to such articles as are best calculated to arouse the energies of this viscus.

In deciding on the propriety of the course, we must be guided, as I have before stated, by the estimate which we may form of the character of the case. Being of purely gastric origin, this

practice

duly limited, as far as regards the carbonate of ammonia, at least, may be found correct, while applied to real cerebral apoplexy, and especially with the alcoholic liquor, it seems inappropriate, and I should suppose, could never be adopted, without manifest, and, perhaps, irreparable mischief.

Employing these remedies, at all, it is at a subsequent period of the disease, presently to be indicated. But how far opiates would be proper, after copious bleedings, and thorough alvine evacuations, deserves consideration. The use of them is suggested to me by their decided efficacy in puerperal convulsions. We have here to all intents and purposes, apoplexy of that variety at least, owing to turgescency of vessels, and it is to such, of a more common occurrence that I should think the practice at all adapted. Congestions of the brain, in most instances, proceed from some antecedent

irritation

*

Combination between opticians, and ~~[illegible]~~ approach, attracting attention here, as well as in Europe, particularly among the disciples of the Darwin School, and perhaps, deservedly.

by which an afflux of blood is attracted to it — and in reference to doing this away I think opiates might possibly be successful. Generally however, a resort is had to the antiphlogistics, and the antimonials in small doses, command much confidence. *

These may be aided by blisters, — though where shall they be applied? Most writers recommend them to the scalp, while others prefer the back of the neck, and several of the distinguished French practitioners insist on their superior efficacy, when put on the extremities, acting as revellents — The fact is, each and the whole may be adopted in the progress of a case, commencing with cold to the scalp, and a blister to the neck, then on the head, and finally to the ankles and wrists.

Mercury may now be also tried, Except by Elliotson, and that very recently, this has not been recommended by any of the foreign writers, so far as I have observed, — which

is the more surprising, as some of them are very liberal in the use of it, in the hydro-cephalic conditions, closely approaching, in several particulars, to apoplexy. – But the practice is familiar to us, and sometimes I have found it productive of the most interesting results. The cases to which it is best adapted on the whole, are such as remain, for a length of time, without any very sensible change – owing probably in some instances, to organic lesions. Mercury here is to be given internally, as well as applied externally, in the shape of frictions, and the blisters to be dressed with the mercurial ointment. The great object for which it is usually directed is to invigorate absorption, with the hope of removing extraneous matters from the brain, – and though this may be occasionally attained, I am inclined to believe, that it is still oftener productive of advantage by the promotion or rectification of the secretions, the hepatic

and

intestinal especially.

The preceding measures proving unavailing, manifestations of the exhaustion of the vital forces, or what is familiarly called the sinking condition, is disclosed, and then it is that a resort is had to those articles, just referred to with a view to renovate or support excitement. But so far as I have seen, little confidence is to be placed in them, or any thing else, death being inevitable.

Of the treatment of apoplexy itself, I have nothing more to say - But as very liable to a recurrence, the preventive measures should be well understood - and I shall therefore make some remarks on the subject - It is right, in the first place, that the causes exciting the disease should be carefully avoided. These have already been mentioned, and need not again be recapitulated in detail. Yet some few precepts are required as to to the prophylaxis.

The

strictest attention in eating and drinking is to be observed, including every article which may prove by its quality or quantity, oppressive to the stomach, or heating or stimulating to the system.

By some of the European writers, particularly Percival and Stoker of Dublin, the use of green tea has been advised as a preventive of the disease. That it should be so, is very extraordinary as in its common operations, it proves one of the most active excitements of the brain. Be this as it may, the use of coffee has been universally condemned.

Exercise, in moderation, is important, to be taken regularly, at stated intervals, and habits sedentary and studious, with any undue watchfulness, or reversely, an indulgence in too much sleep, be abandoned or corrected. The mind is moreover, to be preserved from care or anxiety, and above all, from the agitation of vehement passions.

Great

attention must be paid to the bowels, never permitting the slightest constipation; and where any eruption, especially about the head, or a discharge like the piles, has been suppressed, we should endeavour to restore it. These however, may be compensated, in part, by establishing artificial drains by setons, issues and perpetual blisters, and under all circumstances of a strong predisposition, must not be pretermitted.

It is likewise of consequence to regulate the dress. This is to be such as to protect against cold, and particularly the feet, which last may be done by wearing worsted socks, with some stimulating application to the soles of the feet. Exposures to heat are also to be guarded against either to the sun, or by working over fires, ~~or in the warm bath~~, or even remaining in warm rooms. The hot or warm bath are to be avoided. An attack of apoplexy is often preceded by signs formerly mentioned. The

preventive

treatment consists in copious bleeding, active purging, and blisters to the extremities as revellents, with low diet, a state of repose, and whatever else is fitted to reduce vascular action, and to restore a just equilibrium in the distribution of the blood.

Paralysis or Palsy.

The term paralysis, which is said was first applied by Aretæus to the disease we are about to consider, seems to have been limited by him to the expression of the loss of motion only, and in this narrow sense it long continued to be employed. Even some late writers give to it the same acceptation, defining palsy to consist in a diminution, or loss of motion in the voluntary muscles &c

To embrace the phenomena of the disease, a wider meaning however, must be assigned to it. Paralysis is usually

distinguished

as well by an affection of sensation as of motion, though occasionally the one or the other of these states exists separately, as the motive or sentient nerves may be both, or individually concerned. But the term in every view is a very bad one, its signification from its etymology, being "debility or resolution of the nerves", conveying no accurate notion of the nature of the disease.

Diverse are the forms which palsy exhibits, and it has been found convenient to treat of it in these several presentations. The leading division of the disease is, into general, partial, and local. Yet it seldom pervades the whole body, and never perhaps, except in connexion with apoplexy. The partial palsies are entitled hemiplegia, and paraplegia, by which is meant a lesion of a vertical or longitudinal section of the body, from the head to the feet, and by the second, a transverse section from the hip downwards. Local palsies, are where

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Lately, I attended a lady who was completely hemiplegic on the left side, with the lower right limb in the same state, - and the arm sound. Nearly at the same time, Professor Jackson had under his care, very much such a case, varying, however, in this respect, that the disease fluctuated, - sometimes fixing on these very parts, and on other occasions, presenting a different complication. - Further, it is not uncommon

a single limb or any individual organ or part, or any one of the senses is implicated, and the latter, are called amaurosis, loss of sight, - cophosis & dysœcia loss of hearing, - anosmia, loss of smell, - agueustia loss of taste, - anœsthesia, - loss of touch or feeling &c.

Besides these distinctions, however, some anomalous deviations are recorded, among which, is that of the leg of one side, and the arm of the opposite side being affected, or the sensibility of one limb to be destroyed, without any diminution of the power of motion, or the reverse, the loss of muscular in the one, with in the other, a full retention of feeling.

As the most common states of the disease, hemiplegia, and paraplegia, will chiefly engage my attention. Between them, the only essential difference indeed, consists, in the former more uniformly originating in the brain, and in being more regularly characterised by cerebral disturbance.

In

its mode of aggression, palsy varies considerably. Concomitant on apoplexy, its history has been sufficiently detailed. But it may be a distinct or independent affection, and in this view, it is now to be traced. The disease sometimes comes on suddenly, with little or no premonition, and on other occasions, is preceded by a train of symptoms very much like those of apoplexy. Much slower however may be its approach. Examples have been reported, where a weakness of a limb, or some other part of the body, continued, for weeks, months or years, gradually increasing, till the disease become established.

As a curious anomaly, it is deserving of notice, that the invasion of palsy has been known to commence at the ultimate point of the lower extremities, and gradually proceed upward, till the whole body was included, the sensorial functions, and the muscles of the face alone escaping. The disease too, is

sometimes

intermittent, alternately attacking and disappearing, and finally ceasing altogether, or becoming confirmed, of which one of the most remarkable instances is recorded by Musgrave, where it recurred every eighth day for four successive periods.[a]

[a] Phil. Trans.

During the epidemic prevalence of intermittent fever among us, to which I have so often referred, several instances came under my notice, where palsy was associated with the paroxysm, and ceased on its subsidence. From this circumstance I am induced to suspect that Musgrave's case was of this kind. Examples too, of a somewhat similar nature not observing with any exactness the law of periodicity, I have several times met with in children, uniformly occasioned by the irritation of worms, or of dentition.

Coming on, however, in the ordinary mode, the following phenomena most conspicuously distinguish the paralytic

condition.

The part assailed, is generally more or less flaccid, numb, cold and pale at the moment, with sometimes convulsive twitches - and the muscles of the face being concerned, there is distortion of the countenance, by a drawing to one side of the mouth, eye, or both. This drawing to the sound side, is owing to a loss of power in the antagonist muscles.

An entire deprivation of the use of a limb or limbs may not occur in the commencement. The motions of it, or them, are however, very defective, consisting in a sort of jerking irregular spasmodic action. The affected arm is voluntarily raised with extreme difficulty, or perhaps, not at all, and though the lower extremities shall so far retain power as to enable the individual to take a few steps, these are slow and faltering, the one foot being apt to be thrown across the other, endangering a trip or fall. The pulse is feeble at first,

and

and irregular – certainly less forcible than in apoplexy, though I have seen it otherwise, and is mostly stronger and fuller on the unaffected side. Exceptions however exist in this respect.

The alimentary canal is usually torpid, manifested by difficulty of vomiting, and by costive bowels. There may be a deficiency of the urinary secretions, and where the bladder is paralyzed, the urine formed, is retained except, the sphincter be relaxed, when it constantly trickles out in a small stream. The same may be said in relation to the contents of the bowels, which are sometimes involuntarily discharged, owing to a similar state of the sphincter ani. Great difficulty of deglutition frequently exists, and no less of articulation. As to the degree of temperature, a difference of opinion prevails. ~~Bramwell~~ Earle who has devoted great attention to the enquiry, ~~[illegible]~~ avers

that

he uniformly found paralytic limbs colder than any other portion of the body, and the same, he reports, was confirmed in twenty five cases, in the Bath Hospital. But the general fact has been denied, and directly the contrary is asserted, by some respectable authorities, among whom is Mr John Hunter. Even admitting it ~~[illegible]~~ to be occasionally true, I should be disposed to ascribe the increase of temperature to the artificial warmth from the envelopes of the limb, which is customarily very thickly and warmly covered. Whatever views be taken of the origin of animal heat, we are necessarily conducted to such a conclusion. ~~[illegible]~~ As an animal, or any portion of the system of an animal, retains the vigour of vitality, so is the capacity of generating and preserving an equable temperature, amidst exposures of every kind.

It was once supposed, though not correctly,

that the affected parts are uniformly deprived of sensibility. But such is not true. Cooke informs us that he never saw an instance where sensation was entirely lost. Yet cases of the kind have undoubtedly existed. I have witnessed not the slightest feeling on the application of the actual cautery, and it has been credibly stated that persons with paraplegia, have had the legs accidentally burnt to a cinder without any suffering. It is however usually much impaired, - though the reverse sometimes happens. I have known the part so severely pained as to draw forth as strong expressions of suffering as in the rheumatic or neuralgic affections. The neurilema of the nerves of sensation is probably here, highly irritated or phlogosed. As to muscular power there is the same difference. Cases I repeat occur of a loss of motion, without a loss of sensibility, - and conversely, as the one or the other set of nerves may be affected.

It

is worthy of remark that in some instances of the disease, sensibility is betrayed only be certain impressions. Especially is this true in relation to temperature. Examples are indeed reported, and some of which I have seen myself, of utter insensibility to violent mechanical or other irritants, which were affected even to spasms or convulsions, by the sprinkling of cold water on the part, or exposing it to a slight draft of air, and no less is it true as to heat, though not to the same extent. From palsy being so frequently characterised by this peculiarity, Darwin was led to the inference, that there must be a class of nerves specially appropriated to temperature.

An intimation has already been given, that connected with external palsy, some of the organs of the interior may be involved, and though probably the urinary bladder and lower bowels most frequently

suffer,

no one of the contents of the three great cavities escapes. These may also be independently affected. The symptoms of course are modified by the organ itself, and the severity of the attack,- an imperfect performance, or total cessation of its functions. Thus the heart or lungs being assailed however slightly, great distress is induced, and when violently, life is instantly extinguished. To trace the mode of affection of the other viscera, were superfluous, since it may be so easily learned by a reference to their respective offices, and importance in the animal economy.

Cerebral palsy is also attended with more or less derangement of the senses, and mental functions. The former however, are often little injured, sometimes remain wholly untouched, and in other instances, preternaturally acute. We learn from Heberden, that he once attended a paralytic patient whose sense of smelling

was

rendered so much so, as to furnish perpetual occasions of disgust, every thing nearly, proving offensive to him. The individual had become a perfect Smell fungus.

The latter are mostly weakened, sometimes nearly destroyed, and memory especially suffers. It is said by the late Professor Rush, that it first fails as to words, next as to time, and then as to places, ideas and persons, successively. But I doubt whether so regular an order is commonly observed. Cases are without number, illustrative of various defects of memory. Gallen tells us that he had frequently seen persons who had forgotten the alphabet, - their occupations, and even their names: - We are told by Cooke that he had heard of a gentleman, who, by a fall from a horse, entirely lost the knowledge of a particular language, with which he had been well acquainted. Wepfer,

also,

furnishes a very curious case of this kind, and Baillie, relates that of a gentleman who, in such an attack lost his recollection of the words of his own language, except a very few, which he pronounced with the greatest distinctness, and variety of tone, to express pleasure, or displeasure, joy or sorrow, - to explain the circumstances of his disorder, and to give directions about what he wanted, without being aware that they were not the proper words to convey his meaning. Nearly similar examples are reported by Sir Astley Cooper, one of them of a man, who had the whole of the English language knocked out of his head, retaining the Welsh, and another, where the English was gradually lost, as the disease increased, - the power of speaking German continuing uninterrupted. It sometimes occurs, that with a partial retention of language, there is a misapplication of words, always using them in the

same

sense. Thus paper, for fire,-chase for horse,-table,-for coat, water-for book &c. To this condition it is also incident, not to comprehend the import of terms when spoken, though, accurately, if written. An entire new set of words or phrases, seem in other instances, to be invented.

We had a case of a man in the Almshouse Infirmary, where all recollection of his vernacular language was extinct, he substituting a mere jargon of sounds in place of it, which however, he uttered with such distinctness and signification, as to appear to be the expression of his wants.

The temper is also much affected,-the mild, and the placid becoming peevish petulant and morose, or the reverse,-the sour irritable and fractious, being changed into the patient, submissive, and gentle. But such happy conversions, are very rare, and the tenor of the disease is marked by intellectual imbecility, and correspondent

depravation.

of disposition.

It remains to notice what is called Paralysis agitans, or trembling palsy, a species or variety of the disease so peculiar as to require some consideration. Its earliest manifestations are usually by tremors of the hands or of the head. It may remain in this state, neither worse nor better, for a considerable period, even for thirty or forty years, in two instances, at least, which I well knew. But it is seldom stationary. As it advances, the affection of the hands pervades the whole of the arms, so that, no longer obedient to volition, they refuse to perform their offices, and the individual is reduced to the necessity of being fed. The lower extremities are also liable to be implicated, and when this happens to any extent, on an attempt to move, they become violently agitated, and the power of doing so altogether fails, or the step is exceedingly tottering or unsteady, menacing

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fall forwards.

The terminations of more common palsy are various. Complicated with apoplexy, it often proves fatal in a very short time, or runs such a course as I have already described, in reference to that disease. In other instances, relief is speedily afforded, though on the whole, recoveries very slowly take place. It sometimes happens, that on the very first operation of the remedies, there is so sensible an amendment, that we are led to expect a prompt and complete cure, in which we are disappointed, - the case remaining stationary for months or years, and finally eventuating in a repetition of an attack, or in apoplexy, or extreme emaciation or exhaustion. Thus, it is very common for individuals in this disease, so far to recover as to be enabled to go out and attend to business, with the entire loss of the use of an upper or lower extremity, which is withered and decayed, - or with one whole side much affected, who,

after

a very long interval, have fallen victims to a second or third attack. The most melancholy, however, are what are called bed ridden cases, where the patient with palsy, will be for many years, with scarcely a remnant of sense or motion, unable to stir or to speak, or to feed himself, or retain his fæces or urine, confused in mind, or, perhaps, it is entirely extinct, he continues to vegetate merely a burthen to himself and his friends. Many of these cases are really distressing to behold, from the hideous, or pitiable aspect they exhibit. Connected with a dropping of the chin, there is difficulty of chewing or swallowing or articulating — the saliva constantly falls in a slobbering way from the mouth, — the tears overflow the cheeks, the head rests motionless on the breast, or is occasionally agitated, rolling from side to side, as if it were lifeless, and with this physical decay, and idiotic expression of countenance, we have a spectacle to which

the

vigorous lines of Johnson are as appropriate as in their original application.

"From Marlborough's eyes the tears of dotage flow"
and Swift expires a driveller and a show."

These differences of result, I presume to be owing to the different pathological conditions of the brain, in the ~~various~~ cases. Where recovery is speedy, there is probably simple congestion, which is at once removed, and the cerebral functions are restored, — while, in the more protracted instances, some extravasation or other permanent lesion exists, which retards or utterly prevents the cure.

The Etiology of Cerebral palsy is so similar to that of apoplexy, it is not necessary again, to enter into the details of the subject. Few are the particulars in which they differ in this respect, and these will be indicated. As to the predisposition to the disease, it seems in the main, to be connected with a certain age. Not many persons have it before the meridian of life, and after which

becoming

still more liable to its attacks. Yet I have seen it in all its varieties prior to puberty. It is indeed sometimes congenital, and may be very early acquired in childhood or even infancy. But it is supposed that an hereditary tendency to palsy exists, and which, if true, I presume depends upon a transmission of the peculiar physical configuration, formerly described in my Lecture on apoplexy.

Not less alike, are the exciting causes of the two affections. But in regard to the other forms of palsy, paraplegia, and the local attacks, it appears that though occasionally arising in the brain, they much more frequently proceed from some lesion of the spinal marrow, or nerve supplying a part, owing to injuries, from violence or diverse other agencies. To a fall or blow on the back, a dislocation of the vertebrae, or disease of them, paraphlegia is very often to be traced, and as certainly

is

local palsy induced by mechanical compression of the nerves.

The influence of certain mineral substances, and especially that of lead, whether applied internally or externally, must also be assigned as a cause. Mercury has been productive of the same effect. By professor Ellictson late of the London University, we have been informed of some cases of the disease brought on by handling, and being otherwise exposed to the halitus of quicksilver, and Orfilla ascribes similar effects to Arsenic.

The operation of cold on a system previously heated, is a common source, especially of paraplegia, and local palsy. Cases of the former, thus excited, have repeatedly come under my notice of various gradations of severity, and some to the utter abolition of the use of the lower extremities. The nerves of the face are most apt to be affected in this way. Cold, under the circumstances stated,

is

indeed so prolific a cause of the disease, that we learn it is endemic, to parts of India, particularly along the coast of Malabar. It is ascribed to an exposure to the austere winds of the mountains, which constantly prevail early in the morning, during the hot and rainy seasons. The limbs, upper as well as lower, are sometimes affected, though usually it exhibits the paraplegic condition. But may not this be a modification of rheumatism, such as I described when treating of that affection, so common in the West ~~and~~ East Indies, and there, in many instances, ~~sometimes~~ resembling tetanus?

It was before mentioned that palsy is one of the anomalous symptoms of intermittents, and I may now add it is also of other autumnal fevers[a], from which circumstance the agency of miasmata in its production, is suspected. Be this however as it may, no doubt can longer be entertained of a case of this nature, arising from an irritation of another,

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[a] Tong Meigs

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Not a little surprised am I, that this pathological view has been lately claimed by some of the Dublin school as original to themselves; since it is really of a very ancient date, and may be found in the common treatises on the disease.

remote part being reflected on the cerebro spinal centers.* Certain ingesta in this way, often occasion it, and I have known three cases of it in children, from worms uniformly confined to the arm, and still more frequently from obstructed bowels, or merely ordinary constipation. There is indeed reason to suppose, that the irritations of most of the abdominal viscera, as in apoplexy, may conduce to palsy, and we have some strong proof of those of the kidney actually doing it. This has been recently supplied by Mr Stanly an eminent surgeon of London in a report of ten cases of well marked paraplegia, which occurred to himself or his friends, imagined to be owing to the common causes of that affection and managed accordingly, which on dissection presented no lesions whatever of the vertebral column, or the spinal marrow, or of the brain, and the most serious of the kidney acute or chronic, in the shape of congestion, inflammation,

softening

*This occurred in a Governor of S. Carolina, who came to this City to be cured of a stricture of the urethra, and was attended by an eminent surgeon and myself. Extreme pain, with a disposition to spasm, was manifested at several preceding attempts of the same kind. The case however, devolved on the surgeon chiefly, who renewing the effort, brought on a stroke of palsy, which terminated his life before I could reach that house. Nearly about the same time, by a curious coincidence, I attended with the late Dr Physick, a Governor of another State, for the same affection, ~~[illegible]~~ who betrayed equal intolerance of the operation. The moment the point of the Bougie touched the stricture, he was seized with violent rigors, and excruciating pain of the head, so alarming indeed, in its aspect, that after a fair trial, without effect of the warm bath, the local application of belladonna, stramonium, the general use of opiates &c, to lessen the irritability of the parts, he was permitted to ~~return~~ go home, to return again at more favourable season, it being then very hot, where however, he soon died of some cerebral affection, the exact nature of which I never learnt. No cause however trivial, that will not ~~[illegible]~~ in certain states of the system, sometimes provoke an attack of palsy. Examples of the kind, I have already cited, and I may now add, that it is not an uncommon accident to painful dentition. As the result of convulsions these excited, I have seen it, in the form of hemiplegia, enduring and ultimately fatal — very often locally, producing temporary distortion of the mouth and eyes, and several times, in the loss of motion, of a lower extremity. To the latter, there would seem a sort of family predisposition. Two sisters whom I attended, had it with the cutting of every tooth, & I have witnessed in three children of the same connection, though not so frequently.

of texture, deposits of pus or more destructive disorganizations of structure. That such an effect might be thus occasioned is presumable from the well ascertained connection of the parts. No fact is perhaps better established than that disorders of the spinal marrow are deeply shared by the kidney - the urine particularly becomes ammoniacal or phosphatic, and leading to calculous formations of these characters. Equally is it determined, how acutely does the spinal marrow suffer from injuries of the kidney, and it is readily conceivable, that an intense and enduring irritation of the kind might create paralysis. Even strictures of the urethra probably sometimes induce it, and I knew an instance where it was excited, and ended fatally, in an ~~attempt~~ forcible to introduce a ~~urethra~~ Bougie.*

Characterised as palsy is for the most part, it is very readily distinguished from other diseases. The case which most resembles

the

cerebral form is its kindred affection apoplexy, and here the analogy is sometimes very close. They are indeed as we have seen, often blended, and may be convertible diseases, reciprocally producing each other, apoplexy degenerating into palsy, and the contrary, palsy suddenly becoming apoplexy. But when uncombined, the distinction between them is so clear, that it need not be pointed out circumstantially. In pure palsy, the loss of sense and motion is only partial, – there is an absence of stertor, and other signs of laborious respiration, the pulse is less affected, not to advert to other peculiarities. Nor is it less easy usually to recognise the several species of palsy. The real difficulty is to determine in obscure cases, whether it be of a primary or secondary nature, and next its immediate location, whether in the encephalon or its dependencies, the spinal marrow or nerves, or in which of the abdominal viscera. Being

seated

in any of the latter, it will generally be characterised by essentially the same signs which denote this variety of apoplexy, before noticed. Thus if it be the stomach, symptoms of gastric disorder, – of the bowels of enteric, – of the kidney such as are expressive of its lesions, and so on in relation to other structures.

To discriminate between the paraplegic affections of the spinal marrow, and those of the encephalon is not so easy. Most of the former cases, however are attended by some evident derangement of the vertebrae, or tenderness of the spine, so as to render the point quite certain – and where it is otherwise we may commonly arrive at a just conclusion, by carefully reviewing the history of the case. Having its seat in the brain, it is almost invariably preceded, or accompanied, by vertigo, giddiness, pain of the head, drowsiness depraved vision or total loss of it, as in gutta serena, with a defect of memory, or some other of the intellectual faculties. Now

and

then, numbness takes place in the fingers, or there is confirmed paralysis of one of the upper extremities, which last is still more decisive. To this it has been added by Baillie, as very distinctive, that there is something very peculiar in the gait of the person. He is incapable of walking in a straight line, – the limbs are loose, and thrown forward by an exertion of the whole body, with consciousness of feebleness in walking – and great difficulty in turning round. The movement altogether is much like that of a drunkard. Coming as it does from such high authority, I must still consider this latter sign as very equivocal. The movements here described, are, I think, precisely those which belong to the affection of the spine. It must be confessed, on the whole, that it is often very difficult to arrive at any satisfactory discrimination. Certainly I have seen several instances of paraplegia, without any indication of

cerebral

disorder, though really of this nature, and which were proved so, in the results of the treatment, or by the evidence of dissection.

Between the partial and local palsies, there is so manifest a difference that we can rarely experience any ambiguity. The latter may sometimes be traced to a visible cause, as the pressure of a tumour, or to some obvious disease of the nerve itself. These indications being absent, the nature of the affection may still be inferred from the constitutional exemptions, as well of body as mind.

In the more violent and pervading attacks of palsy, entire recoveries as already intimated are very seldom. There is however even in these, different degrees of danger. Commonly in proportion to the standing of the case, and still more, if it be in an aged person, is the difficulty of cure. This may be received as a general proposition. But the particular nature of the case, has als considerable

influence

on the result. Commencing in the abdominal region it is generally more manageable, than when radicated in any ~~other~~ part of the cerebral or spinal system, and especially if it be preceded by apoplexy. Of the several species of the disease, hemiplegia is the most formidable, as usually originating in the brain. The affection of the spine ~~is~~ perhaps intrinsically more curable, and at all events, proves so in many instances by the obviousness of the source of it —, leading to a juster appreciation of the lesion, and nicer accomodation of remedies. Nor is the cause itself without some influence. Thus, occasioned by lead or other poisonous article, the disease yields more readily than when the consequence of ordinary causes.

Boerhaave asserts that the ~~affections of the upper are more dangerous than those of the lower extremities~~ "The palsies ~~contingent~~ ~~the~~, descending from superior to inferior parts, are favorable: — Whereas, under opposite

circumstances

or ascending from inferior to superior parts the reverse, or unfavourable. How far this is true, I pretend not to know. But I am entirely persuaded that hemiplegia, and perhaps, the more partial affections of the right, are far less manageable than of the left side. Though the difference in this respect early attracted my attention, I have not seen a single entire cure of hemiplegia of the right side. Established as I deem this fact to be, I can give no satisfactory explanation of it. Morgani however states, that lesions of the brain causing palsy, are much more frequently to be met with in the left, than the right side, and the situation of the palsy you are aware is the reverse of the cerebral lesion. But I know of no peculiarity in that side of the brain to render injuries of it less intractable, and I am strongly inclined to suspect the accuracy of his pathological anatomy in this case. Confessedly

palsies

of the right are much less common than of the left side, which ought to be the reverse, were his statement correct.

It is hardly necessary to observe, that local palsies, except when they assail some important or vital organ, as the heart, the stomach, the bowels, the liver &c &c are the least to be regarded, and for the most part are cured. This, however, does not apply to the nerves of sense, the optic auditory, gustatory &c &c. The affections thus produced, as loss of sight, deafness &c are both important, and very frequently prove unmanageable.

I have observed, that among the most favourable symptoms in palsy, generally is the retention or return of sensation, or even pain and swelling, with a natural warmth in the part, and a restoration of speech, if it had been suspended. The first feeling of a recurrence of sensibility, is frequently that of formication, or the

creeping

or stinging of ants, or mere itching or heat. Coldness, insensibility, and ~~appropriately~~ withering of the limb are all bad, and scarcely less so, are cold perspirations habitually.

It may be supposed that, the anatomical characters in cerebral palsy are very analogous to those of apoplexy of the brain. Not to repeat these circumstantially, I shall observe only, that they mainly consist in turgescency of vessels, or extravasations of blood, or effusions of more serous fluids, or collections of pus, or softening or induration of the encephalitic mass, and more rarely, of a total destruction of a portion of it, or of those other infinitely diversified lesions, as well in the meninges, as substances, which were formerly enumerated. It seems now however to be agreed, that in connection with palsy, we most uniformly find the lesion to be seated about the Corpora striata, thalami nervorum opticorum, and

in

the medulla oblongata.

By those who insist on the influence of location of the cause on the phenomena, it has been endeavoured to explain the varieties of cerebral palsy by the particular portion of the brain affected. It is said by Serres, that when the arm is paralytic, the lesion is in the posterior hemisphere, and when the leg, in the anterior, or in the corpus striatum. Bouillaud refers disorder of speech to the anterior part of the brain, which is denied by Cruveilhier, who found it connected with lesions of the middle lobe, and even the cerebellum. Cheyne, and Abercrombie, have met with it throughout the brain, so that the fact remains disputable.

The appearances in cerebral paraplegia I have had few opportunities of ascertaining. But it is not improbable, they are mainly in the anterior hemisphere, and the copora striata especially.

The spine, when it is the primary

seat

of the affection manifests very similar lesions to those of the brain. Every one of ~~these~~ the latter just enumerated has been detected, and from the essential samenes of structure, such a community of suffering might indeed, be presumed. ~~in the same parts~~. The same may be said of the nerves,- though our intelligence is not so precise with regard to their derangements. We are however, told by Sir Charles Bell, that they undergo very considerable changes by thickening, so as to attain to a vast increase of size, or the reverse, become diminished, or wasted, and are liable to be hardened or softened,- while Andral asserts, that he has never observed any deviations whatever from the natural state.

~~But~~ Though such as I have detailed, must be admitted to be the ordinary phenomena of the several portions of the nervous system affected by palsy, it is not to be concealed, that instances have been recorded of all the varities of the disease, in which no departure from healthy structure

could

be detected, and this applies as well to the brain, as the spinal marrow, and nerves.

Excepting those from lead, ~~and~~ which were formerly detailed when discussing colica pictonum, I am not aware of the appearances in the gastric or other palsies of the viscera. But they may be conjectured as not materially different, and it will be recollected, that the phenomena in lead cholic, are chiefly observable ~~detected~~ in the spinal marrow, and alimentary canal.

I have said that, when of cerebral origin, the paralytic affection is on the side of the body opposite to that of the brain in which the lesion is located. This was first noticed by Hippocrates, and subsequent examinations confirm it. Not to mention particularly Morgagni, Haller and Scarpa, who bear testimony to this effect, I shall be content to cite the result of some recent examinations.

We learn from Serres, that he has dissected with attention, one hundred and seventy one bodies of persons who had died of cerebral

apoplexy,

with complete hemiplegia, and in every case found the hemisphere of the brain, opposite to the paralytic affection, materially altered in its structure – that he had examined the brain of forty seven hemiplegic cases without apoplexy, in all of which, there was the same appearance – that he had received from the hospitals of Paris, one hundred and fifty brains of hemiplegiac persons, corroborative of the same fact, and hence, he concludes, that it is no longer disputable. Yet he allows that statements very different from his are to be found in writers –, though he is persuaded that they are erroneous."

Bayle indeed, has collected eight cases from very respectable authorities to this purport, which, however, seem to have had little weight, and the position as laid down by Serres is now generally received. As a solution of this extraordinary problem it is alleged that a decussation of the fibres of the brain takes place, and to this it is owing. But while so

much

is conceded, the point at which it happens is warmly disputed. Being rather a physiological inquiry, than one that materially concerns our immediate subject, I mean not to persue it to any extent. I shall indeed, only remark that, the upper part of the spinal marrow is usually assigned as the place of this decussation, which seems hardly reconcileable with the fact, that though palsy of the face constitutes no exception to the general law of the disease in this respect, the nerves of the muscles of the face, come off prior to the occurrence of the decussation. As to the spine it is different, or the palsy is on the same side of the lesion of the spinal marrow.

The affinity of cerebral palsy to apoplexy had immemorially led pathologists to embrace the proximate cause of the two diseases under the same view, or that they immediately proceed from pressure of the brain, the one or the other affection being produced

according

to the degree of pressure. This doctrine we have seen has been recently arraigned, and not without some pretentions. Let me cursorily review it.

Denying that either disease is owing to compression of the brain, it is maintained by Serres that the extravasations of blood or the effusions of serum generally assigned as the cause, are the mere effects of preexisting irritation or inflammation in the meninges, or the substance of the organ itself, the former productive of apoplexy, and the latter of palsy.

In support of this position, he appeals to extensive dissections carried on in the Hospitals of Paris. Of one hundred cases of apoplexy, twenty one were simple and seventy nine complicated with paralysis - of the former of which, sixteen showed the pia mater injected, the vessels being very much dilated, and the tunica arachnoides opaque and thickened, attended by copious serous effusion. The remaining four of the twenty

one

cases, presented sero-sanguineous effusion, with nearly the same, - though a somewhat more altered structure of the membranes. The lesions here, were exclusively confined to the meninges.

But in the cases of complicated apoplexy, he found with these appearances, appertaining to its envelopes, the brain itself affected. Excavations were met with in it, filled with blood in various states, while the surrounding substance of the organ was red, irritated, inflamed, softened or indurated. He thinks therefore, that he is entitled from his own, and further corroborative examinations made by others to the conclusion, that the two affections are differently located, and dependent on different conditions.

This is a doctrine which emanates from a source too respectable not to command our attention.

As to the abstract position of sorous effusion, or even sanguineous extravasations,

following

irritation, or other diseased states of the brain, it has some collateral support from the consideration, that the same happens with regard to the lungs. Effusions, extravasations, and hemorrhages of these organs, indisputably proceed from a preexisting morbid condition, and even where a rupture of a vessel takes place it is the same as here, except in the case of violence, it gives way, by losing its natural strength, from the effect of antecedent disease.

To indicate my own notions of the pathology of the several forms of paralysis, a few remarks will suffice.

Like apoplexy, to which it is nearly allied, palsy seems mainly to depend on pressure, whether we have regard to its being seated in the brain, spinal marrow or individual nerves. The essential pathological difference between the two affections, consists in the degree, as well as the extent of the pressure, it being greater in each

particular

in the former instance. Thus palsy, is partial apoplexy, limited to a part, and of mitigated severity, as we see strikingly illustrated in hemiplegia. There is here one side of the brain only affected, and this by comparatively moderate congestion or extravasation. Let however, both sides of the brain be involved deeply, in either condition, and we shall then have confirmed apoplexy. That a very large proportion of palsy in all its diversities, is referible to pressure is demonstrable, and cannot longer be fairly questioned. Even those of foreign origin, constitute on the whole, no exceptions, the primary irritation, ~~here~~ in this case, being ~~[illegible]~~ transmitted to the encephalon inducing ultimately like results. Yet, it is true, that instances of the disease occasionally occur where no evidence is afforded by dissection or otherwise, to warrant any such inference. Numerous explanations have been given of these exceptions to the very general rule of

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